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Wood Finish Flooring Use In Single-Family Houses

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Houses built with basements or crawl spaces use 10 times more lumber finish flooring per unit than houses built on concrete slabs. In contrast, slab-foundation houses use about four times more plywood finish flooring per house than units with basements or crawl spaces. Basement or crawl-space houses with 1-1/2 or 2 stories and houses of split-level design use more lumber finish flooring per unit than 1-story houses. Nearly all of the lumber finish flooring was hardwood strip; the remainder was softwood strip and parquet unit-block flooring. The plywood was mostly 9-inch-square laminated block flooring.

Information on finish flooring use was gathered in a survey of wood products used in single-family houses inspected by the Federal Housing Administration in 1962. The study covered 175,000 units--about 18 percent of the private, nonfarm, single-family, detached houses started during the year. Data on materials used for subflooring, the percentage of houses that used various types of finish flooring, and other wood-use information have been given in another publication.[1]

LUMBER FINISH FLOORING

Lumber finish flooring use averaged 737 board feet for all houses in the study; it varied from 170 board feet in Florida to 1,210 board feet in the Northwest (table 1). Florida also had the smallest use per square foot of floor area (0.15 board foot), and the Northwest also had the largest (1.05 board feet) (fig. 1).

Foundation Construction

Basement or crawl-space houses used an average of 1,180 board feet of lumber finish flooring, compared to only 120 board feet in units built on concrete slabs. The percentage of houses by foundation type is shown in table 2. Consumption in basement or crawl-space houses ranged from 1,010 board feet in the Southwest to 1,380 board feet in Florida. Use in slab-foundation houses was smallest in the Northwest and Southwest (less than 10 board feet) and largest in the Central States (240 board feet).

Use per square foot of floor area showed a similar pattern. Basement or crawl-space houses used nearly 1 board foot per square foot of floor area, compared with one-tenth board foot for slab-foundation houses. Non-slab-house use ranged from 0.76 board feet in the Southwest to 1.07 board feet in the South Atlantic region. Since the use per square foot in Florida was only 1.05 board feet, the high total use per house in the State was due to the

[1] Phelps, Robert B. 1966. Wood products used in single-family houses inspected by the Federal Housing Administration, 1959 and 1962. U.S. Dep. Agr. Statist. Bull. 366, 32 pp.

TABLE 1.--Board feet of lumber finish flooring used,[1] by house construction and region

[Per house]

Region	All houses	Houses with basement or crawl-space foundations				Houses with slab foundations		
		All story types	1 story	1-1/2-2 stories	Split level	All story types	1 story	1-1/2-2 stories
All regions:	737	1,176	1,131	1,380	1,268	120	99	361
North Atlantic.	1,046	1,156	1,070	1,430	1,208	120	97	153
South Atlantic.	1,128	1,374	1,328	1,062	1,628	66	79	([2])
Florida.....	168	1,382	1,374	1,427	1,388	46	16	799
Lake States....	1,142	1,181	1,216	1,154	939	10	10	([3])
Central States.	854	1,224	1,170	1,614	1,285	239	226	353
South Central..	301	1,101	1,094	1,504	991	191	156	553
Northwest.....	1,206	1,207	1,176	1,279	1,363	([2])	([2])	([3])
Southwest.....	433	1,011	980	1,438	1,151	([2])	([2])	116
[Per square foot of house floor area]								
All regions:	0.60	0.97	0.99	0.90	0.93	0.10	0.08	0.22
North Atlantic.	.86	.95	.99	.95	.87	.09	.09	.10
South Atlantic.	.89	1.07	1.13	.69	.96	.06	.07	([4])
Florida.....	.15	1.05	1.16	.89	.97	.04	.01	.54
Lake States....	1.03	1.06	1.14	.83	.90	.01	.01	([3])
Central States.	.72	1.04	1.07	.97	.99	.20	.19	.22
South Central..	.24	.84	.89	.89	.68	.15	.13	.32
Northwest.....	1.05	1.05	1.07	.83	.99	([4])	([4])	([3])
Southwest.....	.34	.76	.75	.83	.74	([4])	([4])	.07

[1] Flooring use includes allowance for onsite waste but not flooring manufacturing waste.
[2] Less than 10 board feet.
[3] No houses tabulated.
[4] Less than 0.01 board foot.

large average house size. Slab-house use per square foot of floor area ranged from less than 0.01 board foot in the Northwest and Southwest to about 0.20 board foot in the Central States.

Story Construction

Basement or crawl-space houses

In basement or crawl-space houses, lumber finish flooring use was largest in those with 1-1/2 or 2 stories. However, this was due to their large average size. Both 1-story and split-level houses used more flooring per square foot of floor area (fig. 2).

Among 1-story, basement or crawl-space houses, those constructed in Florida used the most flooring, both per house and per square foot of floor area. Four other regions--the South Atlantic, Lake States, Central States, and Northwest--used nearly as much per square foot, but somewhat less per house. One-story nonslab houses in the Southwest used substantially less flooring than similar houses in other regions.

One-and-one-half or 2-story houses built in the Central States and North Atlantic regions used the most flooring per square foot of floor area. Those constructed in the South Atlantic region used the least.

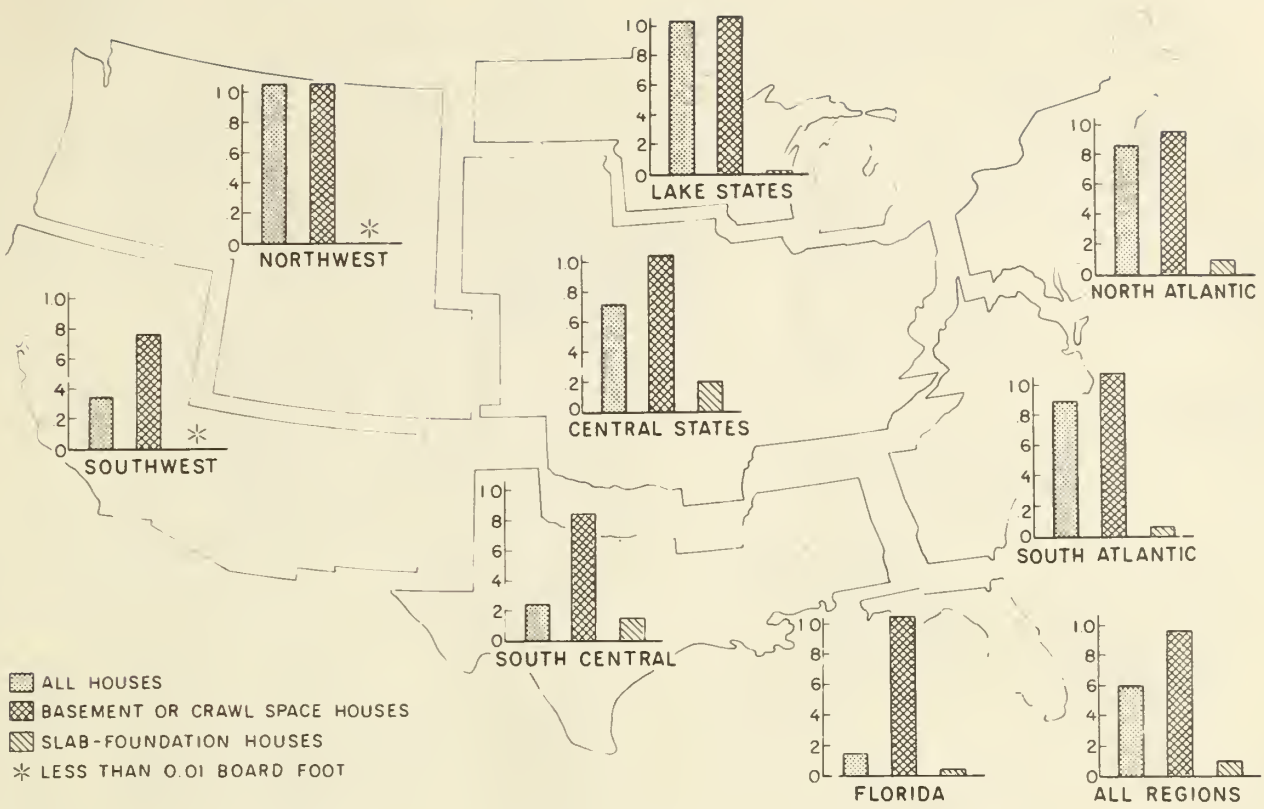

Figure 1.--Regional use of lumber finish flooring, in board feet per square foot of house floor area.

TABLE 2.--Percent of houses, by specified construction type and region

Region	All houses	Houses with basement or crawl-space foundations				Houses with slab foundations		
		All story types	1 story	1-1/2-2 stories	Split level	All story types	1 story	1-1/2-2 stories
All regions:	100	59	44	5	10	41	38	3
North Atlantic.	100	89	57	14	18	11	6	5
South Atlantic.	100	81	64	2	15	19	16	3
Florida.....	100	9	5	(1)	4	91	87	4
Lake States....	100	97	73	15	9	3	3	(1)
Central States.	100	62	42	3	17	38	34	4
South Central..	100	12	8	1	3	88	80	8
Northwest.....	100	100	82	4	14	(1)	(1)	(1)
Southwest.....	100	44	40	3	1	56	55	1

[1] Less than 0.5 percent.

Split-level houses in the South Atlantic region consumed larger average amounts of lumber flooring than split-level units in other regions; however, those built in the South Atlantic region, Florida, Central States, and Northwest all used large amounts per square foot of floor area. The smallest use per square foot of floor area was in the South Central region.

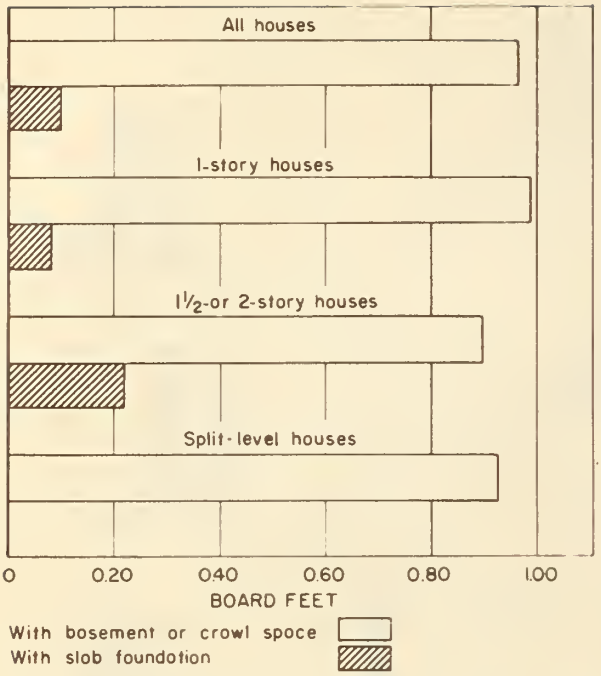

Figure 2.--Use of lumber finish flooring by type of house, in board feet per square foot of house floor area.

Slab-foundation houses

For all slab houses in the study, those with 1-1/2 or 2 stories used an average of 360 board feet, compared with the average of 100 board feet used by 1-story units. Per square foot of floor area, 1-1/2- or 2-story slab houses consumed 0.22 board foot; 1-story units consumed 0.08 board foot. In each region, slab houses with 1-1/2 or 2 stories had more flooring use per unit and per square foot of floor area than 1-story slab houses. This resulted from the prevalent use of wood floors in the upper story.

One-story slab houses constructed in the Central and South Central regions used more lumber finish flooring, both per house and per square foot of floor area, than similar houses in other regions. Those built in the Northwest and Southwest used the least.

In 1-1/2- or 2-story slab houses, use in Florida was much higher than in other regions. Three regions had too few multistory houses for meaningful estimates.

Exterior Wall Construction

Houses with wood-frame exterior walls used an average of 800 board feet of lumber finish flooring; those with masonry exterior walls, 270 board feet. The large difference was mainly because only 36 percent of the frame houses had slab foundations, compared with 80 percent of the masonry houses. The relationship was similar in all eight regions. In addition, frame houses were 35 square feet larger than masonry houses.

PLYWOOD FINISH FLOORING

Compared with lumber, use of plywood finish flooring was small--an average of 18 square feet (1/2-inch basis) for all houses in the study.

In contrast to lumber, plywood finish flooring use per house was larger for slab-foundation houses than for nonslab units. Slab houses used an average of about 30 square feet; nonslab houses used 8 square feet.

Average use in 1-1/2- or 2-story houses--90 square feet--was much more than the 12 square feet used in 1-story houses and the 2 square feet consumed in split-level houses.

Plywood finish flooring use ranged from 65 square feet per house in the South Central region to 1 square foot in the Lake States. For the remaining regions, per unit use varied between 19 and 2 square feet. No regional breakdown of plywood use by type of foundation or number of stories is shown because of the small amount consumed in most regions.

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